What is claimed is:

1. In a magnetron plasma etching apparatus, a magnetron plasma etching apparatus, comprising:

a process chamber which may be set to a high pressure sensitive environment, and at least one portion of the process chamber is formed of a conductive member;

an introduction means for introducing an etching gas into the process chamber;

an eventuation means for eventuating the process chamber;

an electrode means which is formed of a first electrode exposed in the process chamber and having a mounting surface on which a substrate which will be etched is mounted, and a second electrode exposed in the process chamber and being opposite to the mounting surface of the first electrode and having conductivity;

a power supply means for applying a RF voltage to both electrodes for generating an electric field between the first electrode and second electrode; and

a magnetic field generation means which is installed to surround the process chamber and forms a magnetic field which is sequentially rotatable in the process chamber, said magnetic field being orthogonal with respect to the electric field based on a variable voltage and current between the first and second electrodes.

2. The apparatus of claim 1, wherein said magnetic field generation means includes at least one coil block which is installed in a back surface of the conductive member.

3. The apparatus of either claim 1 or claim 2, wherein said coil block includes:

a primary coil block formed of a plurality of coils and a plurality of ferrites; and

a secondary coil block formed of a plurality of coils.

4. The apparatus of either claim 1 or claim 2, wherein an AC or DC power is applied to the primary and secondary magnetic coil blocks so that the primary and secondary magnetic coil blocks are rotated in the reverse direction each other at a speed faster than 10msec for thereby generating AC or DC magnetic field.

5. The apparatus of claim 4, wherein in the case that the AC power is applied to the primary and secondary magnetic coil blocks, an AC power having a frequency from 1Hz to 100Hz is applied to the primary and secondary magnetic coils, respectively.

6. The apparatus of either claim 1 or claim 5, wherein in the case that the DC power is applied to the primary and secondary magnetic coil blocks, a DC power is applied thereto for thereby controlling using the control apparatus.

7. The apparatus of either claim 1 or claim 2, wherein in said coil block, at least two other coil blocks are combined externally, and a DC power is applied thereto at the same time, respectively.

8. The apparatus of claim 7, wherein in the case that the coil block applies a DC power to the primary, secondary, and third coil block at the same time, respectively, the primary and secondary magnetic coil blocks are rotated in the same direction at the same time.

9. The apparatus of claim 7, wherein in a rotational magnetic field of the primary and secondary magnetic coil blocks, the size of the magnetic field of the primary magnetic coil block is larger than the size of the magnetic field of the secondary magnetic coil block.

10. The apparatus of either claim 1 or claim 2, wherein said primary coil block is adapted to applying a magnetic field of a range of 0 Gauss to 250 Gauss of a substrate.

11. The apparatus of either claim 1 or claim 2, wherein said secondary coil block is formed of a coil capable of applying a magnetic field of a range from 0 Gauss to 200 Gauss of a substrate which confines an ion drifting of plasma, for thereby confining an ion drifting of plasma.